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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/821,767	04/09/2004	Michael Tolbert Myers	SHEL.110604 / TH2478	1457

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EXAMINER	
SAINT SURIN, JACQUES M	

ART UNIT	PAPER NUMBER
2856	

DATE MAILED: 04/21/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/821,767	MYERS ET AL.	
	Examiner	Art Unit	
	Jacques M. Saint-Surin	2856	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *03 February 2006 and 27 February 2006*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-15,17-30 and 34-63* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☐ Claim(s) _____ is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date *02/06*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Response to Amendment

1. This Office Action is responsive to the amendment of 02/03/06.

2. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

Claim Rejections - 35 USC § 102

3. Claims 1- 2 and are rejected under 35 U.S.C. 102(b) as being anticipated by Ounadjela (US patent 5,477,101).

Regarding claims 1, Ounadjela discloses an apparatus (well 10) for acoustically analyzing a fluid (34) comprising: a chamber (tube 14) for holding the fluid (14); a transmitter (transducer 12) positioned within the chamber (14) for transmitting an acoustic signal through the fluid (34); a reflector (segment 20 inside the tube 14) positioned within the fluid (34) for reflecting the acoustic signal; and a receiver positioned within the chamber for detecting a reflection of the acoustic signal (receivers (not shown) are placed either in other adjacent wells or in the well 10 itself or else on the surface on the ground, col. 2, lines 59-62), furthermore, col. 2 lines 65-67 disclose the signals detected by the receivers are analyzed in order to determine the characteristics of the underground formations surrounding the well 10; wherein said apparatus is incorporated in a downhole sampling device (downhole acoustic transducer, col. 1, line 9). Regarding claim 2, Ounadjela discloses a cylindrical vessel defining an internal bore having a vertical axis in which a piston 40 is slidably received, see; col. 4, lines 58-59.

Claim Rejections - 35 USC 103

4. Claims 1, 5, 20-23, 25, 34-36 and 38-39 are rejected under 35 U.S.C. 103(a) as being unpatentable over Coupland et al. (US Patent (US Patent 6,912,891) in view of Ounadjela (US Patent 5,477,101).

. Regarding claim 1, Coupland discloses an apparatus for acoustically analyzing a fluid comprising: a chamber (Fig. 8 shows a chamber for holding fluid) for holding the fluid; a transmitter (Fig. 8 shows a transducer within the chamber) poqitioned within the chamber for transmitting an acoustic signal through the fluid;

a reflector (Fig. 8 shows a delay line positioned within the fluid for reflecting the acoustic signal;

and a receiver Fig. 8 shows a transducer) positioned within the chamber for detecting a reflection of the acoustic signal. Although Coupland discloses the delay line is directly connected to the exposed end of the transducer to essentially create a probe, it does not specifically disclose or suggest wherein said apparatus is incorporated in a downhole sampling device. Uunadjela discloses a downhole acoustic transducer for use in a well such as an oil well, see: col. 1, lines 9-10. It would have been obvious to one having ordinary skill in the art at the time of the invention to utilize in Coupland the downhole transducer of Ounadjela because it would provide a transducer capable of whistanding high pressure and high temperature encountered in boreholes for the purpose of generating or detecting acoustic waves in an efficient manner thereby, making the above combination more effective.

Regarding claim 20, it is similar in scope with claim 1 and therefore, it is rejected for the reasons set forth for that claim. Furtehrmore, Ounadjela discloses reference 10 designates an oil well traversing an underground formation which is to be investigated, col. 2, lines 52-53.

Regarding claims 5, 21-23 and 25, Coupland shows in Fig. 8 a transducer within the chamber and transmits and receives signal. Furthermore, Coupland discloses an electrical spike signal was passed to a broadband ultrasonic transducer which converted the energy ultrasound. Therefore, the transducer of claim 8 is inherently a piezoelectric transducer.

Regarding claim 23, Coupland discloses the reflector (delay line) is a small object usually similar in size and shape to the transducer being used (e.g., disc like).

Regarding claim 25 Coupland discloses the present invention is concerned solely with the use of ultrasonic reflectance from (and not transmittance through) the sample being investigated. This sensing modality enjoys all of the advantages of conventional ultrasonic transmission (i.e., velocity and attenuation) measurements, see: col. 7, lines 17-23. Coupland further discloses an oscillating forcewas applied to the tube and the frequency of resonance measured. The resonance propedies of the filled tube depend on its mass and, since the tube volume was known, the density of the fluid could be measured to very high precision, see: col. 8, lines 4-9.

Regarding claim 34, Coupland discloses a solid object in contact with the fluid to be investigated. This solid object is essentially a delay line through which the ultrasonic waves travel before reaching the fluid interface where they are partially reflected back

through the delay line before being detected, col. 5, lines 32-37. The above teaching meets the limitations "the reflector is substantially stationary".

Regarding claims 36, 38-39, Coupland discloses the delay line is a small object usually similar in size and shape to the transducer being used (disc like). Coupland further discloses this probe can then be inserted into the fluid to be investigated at will or can be installed fixedly into the fluid processing system so that it is in contact continuous with the fluid (col. 5, lines 49-56). The above teaching meets the limitations of the reflector is moveably positioned.

5. Claim 37 is rejected under 35 U.S.C. 103(a) as being unpatentable over Coupland et al. (US Patent (US Patent 6,912,891) in view of Ounadjela (US Patent 5,477,101) and further in view of Birchak et al. (US Patent 5,741,962).

Regarding claim 37, Coupland in view of Ounadjela does not disclose a wireline fluid sampling tool. Birchak discloses a wireline 23 It would have been obvious to one having ordinary skill in the art at the time of the invention to utilize in Coupland in view of Ounadjela the techniques Birchak because it would allow the passage of the device into the wellbore by means of a wireline into a desired depth thereby permitting a reliable investigation.

6. Claims 2-4 are rejected under 35 U.S.C. 103(a) as being unpatentable over Coupland et al. (US Patent 6,912,891) in view of Ounadjela (US Patent 5,477,101) and further in view of Brown et al. (US Patent 6,467,544).

Regarding claims 2-4 and 15, although Coupland shows in Fig. M a chamber which comprises a sealed first end, a motor, however, it does not disclose a piston

slidably disposed within a second end of the chamber and a conduit for introducing the fluid into the chamber. Brown discloses the sample module includes a chamber for receiving and storing fluid, and a piston slidably disposed in the chamber (see: col. 3, lines 21-23). It would have been obvious to one having ordinary skill in the art at the time of the invention to utilize in Coupland the slidable piston of Brown because it would define a sample cavity and a buffer/pressurization cavity, the cavities having variable volumes determined by movement of the piston thereby obtaining effectively the pressurization cavity to control the pressure of the collected sample fluid in an emcient manner.

7. Claims 1 1-12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Coupland et al. (US Patent 6,912,891) in view of Chung et al. (US Patent Re 33,837).

Regarding claim 11, Coupland does not disclose first and second electromagnetic coils being independently driven for manipulating the reflector. Chung discloses more particularly, rods 66 and 70 may, for example, be prestrained by corresponding permanent magnets 120 and 122 carried above them in reflector 76 alternatively electromagnetic coils may be substituted for magnets 120 and 122 in some applications in which permanent magnets might be prohibitively bulky), see: col. 11, lines 63-68. It would have been obvious to one of the ordinary skill in the art at the time of the invention to utilize in Coupland the electromagnetic coils of Chung because whereas magnetostrictive material having a positive strain constant will elongate (and magnetostrictive material having a negative strain constant will contract) with

magnetization independent of the sign (positive or negative) of the magnetic field applied, the amount of such movement is related to the absolute magnitude of the applied magnetic field thereby making the above combination able to drive or manipulate the reflector effectively.

Regarding claim 12, Coupland discloses the present invention is concerned solely with the use of ultrasonic reflectance from (and not transmittance through) the sample being investigated. This sensing modality enjoys all of the advantages of conventional ultrasonic transmission (i.e., velocity and attenuation) measurements, see: col. 7, lines 17-23. Coupland fudher discloses an oscillating force was applied to the tube and the frequency of resonance measured. The resonance propedies of the filled tube depend on its mass and, since the tube volume was known, the density of the fluid could be measured to very high precision, see: col. 8, lines 4-9.

8. Claim 24 is rejected under 35 U.S.C. 103(a) as being unpatentable over Coupland et al. (US Patent 6,912,891) in view of Lynnwodh (US Patent 5,515,733).

Regarding claim 24, Coupland does not disclose the reflector is a ring positioned opposite to the transducer relative to the piston. Lynnwodh discloses a back-up seal consisting of an attenuating O-ring of silicone or fluorosilicone may be captured between the transducer housing and the nearby cylindrical wall, see: col. 5, lines 28-30. It would have been obvious to one having ordinary skill in the ad at the time of the invention to utilize in Coupland the ring of Lynnwodh because this assures that the acoustic path between the transducer and the transducer's point of attachment to the conduit passes through an alternating series of massive elements in an emcient

manner.

Allowable Subject Matter

7. Claims 14-15, 17-19, 41-63 are allowed.

8. Claims 6-10, 13, 19 and 26-30 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Response to Arguments

9. Applicant's arguments with respect to claims 1-15, 17-30 and 34-63 have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

10. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

11. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jacques M. Saint-Surin whose telephone number is (571) 272-2206. The examiner can normally be reached on Maxi Flex.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Hezron Williams can be reached on (571) 272-2208. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Jacques M. Saint-Surin
April 17, 2006

HEZRON WILLIAMS
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